

CLAIMS

What Is Claimed Is:

1 1. An anti-diabetic composition comprising an aqueous extract
2 of plants of the genus *Brickellia*.

1 2. The anti-diabetic composition of Claim 1, wherein the extract
2 is from *Brickellia californica*.

1 3. An anti-diabetic composition consisting of a flavonoid
2 selected from the group consisting of luteolin, myricetin, dihydrokaemferol,
3 apigenin, quercetin and mixtures thereof.

1 4. An anti-diabetic composition consisting of a mixture of
2 luteolin, dihydrokaemferol and apigenin.

1 5. The anti-diabetic composition of Claim 4, wherein the molar
2 concentration of luteolin is at least twice that of dihydrokaemferol and apigenin
3 added together.

1 6. A method for treatment of diabetes mellitus comprising the
2 step of administering a quantity of an aqueous extract of plants of the genus
3 *Brickellia* to result in a reduction in blood glucose.

1 7. The method of Claim 6, wherein the extract is from *Brickellia*
2 *californica*.

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1 8. A method for treatment of diabetes mellitus consisting of the
2 step of administering a quantity of a flavonoid selected from the group consisting
3 of luteolin, myricetin, dihydrokaemferol, apigenin, quercetin and mixtures thereof
4 to result in a reduction in blood glucose.

1 9. The method of Claim 8, wherein a mixture of luteolin,
2 dihydrokaemferol and apigenin is administered.

1 10. The method of Claim 9, wherein the molar concentration of
2 luteolin is at least twice that of dihydrokaemferol and apigenin added together.

1 11. A method of controlling diabetes mellitus in a mammal
2 comprising the step of administering to the mammal a molecule that binds to
3 $K_v1.3$ ion channels.

1 12. The method of Claim 11, wherein the molecule is a
2 flavonoid.

1 13. The method of Claim 12, wherein the flavonoid is luteolin.

1 14. A method of controlling unwanted proliferation to T-cells in a
2 mammal comprising the step of administering to the mammal a molecule that
3 binds to $K_v1.3$ ion channels.

1 15. A method of screening a group of compounds for anti-
2 diabetic activity in a mammal comprising the step of determining which members
3 of the group binds to and blocks $K_v1.3$ ion channels, wherein the members
4 binding to and blocking $K_v1.3$ ion channels are selected as having potential anti-
5 diabetic activity.

1 16. A method of screening a group of compounds for ability to
2 suppress autoimmune responses in a mammal comprising the step of
3 determining which members of the group binds to and blocks $K_v1.3$ ion channels,
4 wherein the members binding to and blocking $K_v1.3$ ion channels are selected as
5 having potential ability to suppress autoimmune responses.

1 17. A compound that contrails diabetes mellitus in a mammal
2 characterized in that the compound binds to and blocks $K_v1.3$ ion channels,